

Disability histories as predictors of mental health among late midlife Americans

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Aging with Disability: Demographic, Social, and Policy Considerations

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Mental Health Consequences of Aging with Disability

- Individuals aging with disability are more likely to experience secondary conditions and accelerated impairment.
- According to the National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention (2011), **mental health and depression are important secondary conditions for people with disabilities.**

Mental Health Consequences of Aging with Disability

- Following disability onset, individuals report lower quality of life and life satisfaction, more depressive symptoms, less mastery, and higher levels of anxiety disorders.
- Prior research has suggested individuals aging with a disability have worse mental health trajectories over time.

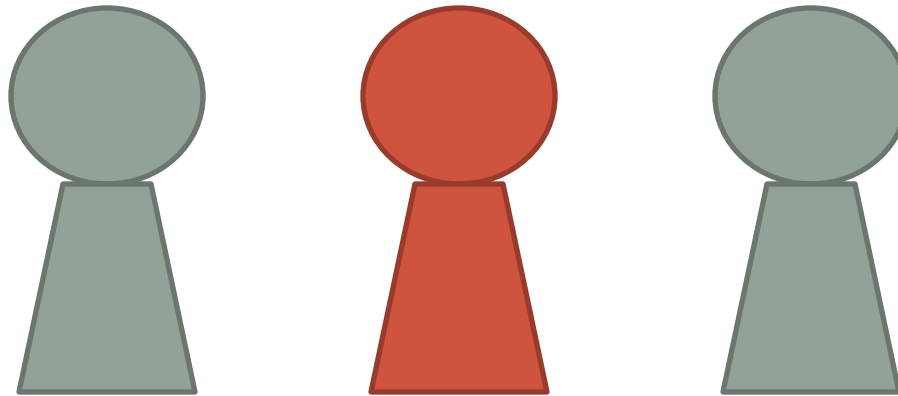
(Bruce, 1999; 2001; Lucas, 2007; Nätterlund, Gunnarsson, & Ahlström, 2000; Schieman & Turner, 1998; Sareen et al., 2006)

Mental Health Consequences of Aging with Disability

- However, there is some evidence that individuals aging with disability, specifically living with a disability 20 or more years, have similar mental health outcomes as those aging without disability.

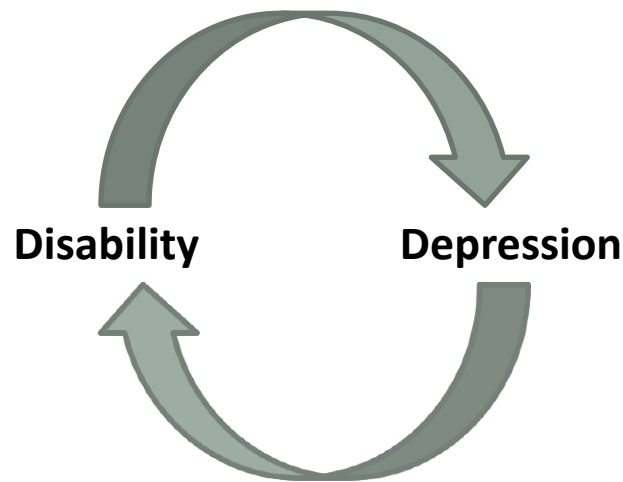
Disability, Depression, and the Life Course

- According to Kemp (2004), “approximately one person in every three who has a disability also has either moderate or severe depression” (p. 53).



Disability, Depression, and the Life Course

- Empirical research from longitudinal surveys suggests that there is a “spiraling trajectory over time, whereby depression increases the risk of disability; disability increases the risk of more depression; and each condition continues to reinforce the other.”



Disability, Depression, and the Life Course

- People aging with disability may be at an even greater risk of depression and poorer mental health in later life due to the potential synergistic nature of disability and depression over the life course.
- Yet, other research investigating aging with disability and mental health have indicated possible adaptation from longer disability durations.

Research Objective

- This research explores whether disability histories (i.e., childhood disability and application for disability benefits status) are associated with depression in late midlife.

Methods and Data

- Data for this research comes from Wave 9 (2008) of the *Health and Retirement Study* (HRS).
 - The HRS is an ongoing, nationally-representative, longitudinal survey of older Americans, which sponsored by the National Institute of Aging (grant number NIA U01AG009740). The surveys are conducted by the Institute for Social Research at the University of Michigan.
- Additionally, this project utilizes the most recent RAND HRS Data file (version L).
 - The RAND HRS Data file is a user friendly, longitudinal data set created from original HRS data by the National Institute on Aging and the Social Security Administration.

Methods and Measures

- Center for Epidemiologic Studies Depression Scale (CES-D)
 - The HRS utilizes an 8-item version of the CES-D which asks, in the past two weeks, did the respondent feel:
 - depressed
 - activities were an effort
 - sleep was restless
 - loneliness
 - sad
 - unmotivated
 - happy
 - enjoyed life.

Methods and Measures

- A three-category variable was created from the CES-D 8 so that greater symptom burden among depressed respondents (i.e., those reporting 3 or more symptoms) could be distinguished.
 - The categories included no depression (0-2 depressive symptoms), moderate depressive symptoms (3-5 depressive symptoms), and severe depressive symptoms (6 or more depressive symptoms).

Methods and Measures

- **Disability histories** were evaluated using two measures:
 - childhood disability
 - application for disability benefits.

Methods and Measures

- Retrospective reports of **childhood disability** were asked of the respondents: “Before you were 16 years old, were you ever disabled for six months or more because of a health problem? That is, were you unable to do the usual activities of classmates or other children your age?”

Methods and Measures

- **Application for disability benefits** was measured using an indicator of whether a respondent had ever applied for any governmental disability programs (e.g., Social Security or Supplemental Security Income (SSI)) and the year they *first* applied.
 - For the first part of the analysis, a categorical measure was created that incorporated whether a respondent had ever applied and the how many years since first applying with never applied (reference), applied 0-3 years ago, applied 4-8 years ago, 9-14 years ago, and applied 15+ years ago as the categories.
 - The second part of the analysis, which was completed on a subset of respondents who had ever applied for disability benefits, utilized a continuous measure of years since first applying (range: 0-43 years).

Methods and Measures

- Demographic characteristics (Model 1)
 - sex, age, and race/ethnicity
- Childhood health and socioeconomic status (SES) (Model 2)
 - childhood depression, childhood learning problem, number of childhood conditions, and childhood financial hardship
- Late midlife SES (Model 3)
 - education and poverty threshold status
- Late midlife social support (Model 4)
 - married/partnered and close friends living nearby
- Late midlife physical health (Model 5)
 - ADL, IADL, and number of chronic conditions

Analytic Strategy

- A series of multinomial logistic regression models were created to ascertain whether childhood disability was a predictor of depression (i.e., moderate depressive symptoms or severe depressive symptoms) among the entire sample of respondents aged 50 to 60 years.
- An additional series of multinomial logistic regression models were generated among respondents who had applied for disability benefits.
 - Two models were employed to test an interaction between childhood disability and years since applied for disability benefits.

Table 1. Descriptive statistics for respondents ages 50-60 years, (N=3,552)

	Distribution Information ^a
Depression:	
No Depression	77.2%
Moderate Depressive Symptoms	14.0%
Severe Depressive Symptoms	8.8%
Childhood Disability	3.9%
Demographic Characteristics:	
Sex (female=1)	60.8%
Age	56.4 (2.6)
Race/Ethnicity:	
White	68.1%
Black/African American	15.3%
Latino/Hispanic	13.2%
Other race	3.4%
Childhood Health Measures:	
Childhood Depression	4.0%
Childhood Learning Problem	3.9%
Number of Childhood Cond.	0.6 (0.9)
Childhood Socioeconomic Status:	
Family Financial Hardship	17.5%

Table 1. Descriptive statistics for respondents ages 50-60 years, (cont.)

Late Midlife Socioeconomic Status:	
Education (num. of yrs.)	13.2 (3.1)
Below Poverty Threshold	10.6%
Late Midlife Social Support:	
Married/Partnered	73.5%
Friends Living Nearby	54.8%
Late Midlife Physical Health:	
Functional Health:	
ADL Index	0.2 (0.7)
IADL Index	0.2 (0.5)
Number of Chronic Cond.	1.6 (1.4)
Disability Benefits Application Status:	
Never Applied	84.4%
Applied 0-3 years ago	3.9%
Applied 4-8 years ago	4.2%
Applied 9-14 years ago	3.7%
Applied 15+ years ago	3.8%

Source: *The Health and Retirement Study* (HRS), 2008

Notes: ^aPercentage distributions are shown for categorical variables; means and (standard deviations) are shown for continuous variables

Table 2. Odds ratio estimates of moderate depressive symptoms versus no depression (N=3,552)

	Moderate Depressive Symptoms				
	Model 1	Model 2	Model 3	Model 4	Model 5
Childhood Disability	1.90**	1.40	1.40	1.36	0.99
Demographic Characteristics:					
Sex (female=1)	1.23*	1.19	1.15	1.10	1.13
Age	1.00	1.01	1.00	0.99	0.98
Race/Ethnicity:					
White (ref.)					
Black/African American	1.38*	1.45**	1.21	1.07	0.91
Latino/Hispanic	1.60***	1.62***	0.98	0.98	1.06
Other race	1.14	1.03	0.93	0.92	0.84
Childhood Health Measures:					
Childhood Depression		3.46***	3.71***	3.75***	3.43***
Childhood Learning Problem		2.49***	1.95**	1.92**	1.89**
Number of Childhood Cond.		1.20***	1.22***	1.22***	1.09
Childhood Socioeconomic Status:					
Family Financial Hardship		1.42**	1.29*	1.28*	1.14

Notes: *0.05 ≤ p < 0.01; ** 0.01 ≤ p < 0.001; *** p ≤ 0.001

Model 1= Childhood Disability + Demographic Characteristics

Model 2= Model 1 + Childhood Health and SES Measures

Model 3= Model 2 + Late Midlife SES

Model 4= Model 3 + Late Midlife Social Support

Model 5= Model 4 + Late Midlife Physical Health

Table 2. Odds ratio estimates of moderate depressive symptoms versus no depression (cont.)

Moderate Depressive Symptoms					
	Model 1	Model 2	Model 3	Model 4	Model 5
Late Midlife Socioeconomic Status:					
Education (num. of yrs.)		0.90***	0.90***	0.93***	
Below Poverty Threshold		2.09***	1.77***	1.20	
Late Midlife Social Support:					
Married/Partnered			0.60***	0.62***	
Friends Living Nearby			1.05	1.03	
Late Midlife Physical Health:					
Functional Health:					
ADL Index				1.61***	
IADL Index				1.50***	
Number of Chronic Cond.				1.15***	
Disability Benefits Application Status:					
Never Applied (ref.)					
Applied 0-3 years ago				1.79*	
Applied 4-8 years ago				2.33***	
Applied 9-14 years ago				1.31	
Applied 15+ years ago				1.53	

Notes: * $0.05 \leq p < 0.01$; ** $0.01 \leq p < 0.001$; *** $p \leq 0.001$

Table 2. Odds ratio estimates of severe depressive symptoms versus no depression (cont.)

	Severe Depressive Symptoms				
	Model 1	Model 2	Model 3	Model 4	Model 5
Childhood Disability	2.56***	1.75*	1.81*	1.75*	1.11
Demographic Characteristics:					
Sex (female=1)	1.37*	1.32**	1.24*	1.15	1.15
Age	1.06*	1.07**	1.06*	1.05	1.01
Race/Ethnicity:					
White (ref.)					
Black/African American	1.57**	1.67**	1.18	0.98	0.72
Latino/Hispanic	3.27***	3.22***	1.56*	1.54*	1.87**
Other race	1.42	1.27	1.01	0.98	0.74
Childhood Health Measures:					
Childhood Depression		5.15***	5.65***	5.50***	4.67***
Childhood Learning Problem		2.78***	2.07**	1.97**	2.00*
Number of Childhood Cond.		1.17**	1.20**	1.21***	0.96
Childhood Socioeconomic Status:					
Family Financial Hardship		1.69***	1.51**	1.46*	1.18

Notes: *0.05 ≤ p < 0.01; ** 0.01 ≤ p < 0.001; *** p ≤ 0.001

Model 1= Childhood Disability + Demographic Characteristics

Model 2= Model 1 + Childhood Health and SES Measures

Model 3= Model 2 + Late Midlife SES

Model 4= Model 3 + Late Midlife Social Support

Model 5= Model 4 + Late Midlife Physical Health

Table 2. Odds ratio estimates of severe depressive symptoms versus no depression (cont.)

Severe Depressive Symptoms					
	Model 1	Model 2	Model 3	Model 4	Model 5
Late Midlife Socioeconomic Status:					
Education (num. of yrs.)		0.89***	0.88***	0.92***	
Below Poverty Threshold		3.74***	2.98***	1.62*	
Late Midlife Social Support:					
Married/Partnered			0.49***	0.50***	
Friends Living Nearby			0.74*	0.71*	
Late Midlife Physical Health:					
Functional Health:					
ADL Index				1.75***	
IADL Index				1.70***	
Number of Chronic Cond.				1.46***	
Disability Benefits Application Status:					
Never Applied (ref.)					
Applied 0-3 years ago				1.84*	
Applied 4-8 years ago				2.48***	
Applied 9-14 years ago				1.53	
Applied 15+ years ago				1.64	

Notes: * $0.05 \leq p < 0.01$; ** $0.01 \leq p < 0.001$; *** $p \leq 0.001$

Table 3. Descriptive statistics for respondents who have applied for disability benefits (N=556)

	Distribution Information ^a
Depression:	
No Depression	45.5%
Moderate Depressive symptoms	28.2%
Severe Depressive symptoms	36.3%
Childhood Disability	8.8%
Years Since Applied for Disability Benefits	9.9 (8.0)
Demographic Characteristics:	
Sex (female=1)	58.8%
Age	56.6 (2.5)
Race/Ethnicity:	
White	53.3%
Black/African American	26.8%
Latino/Hispanic	16.1%
Other race	3.8%
Childhood Health Measures:	
Childhood Depression	8.9%
Childhood Learning Problem	9.8%
Number of Childhood Cond.	0.9 (1.3)

Distributional Information of Depressive Symptoms

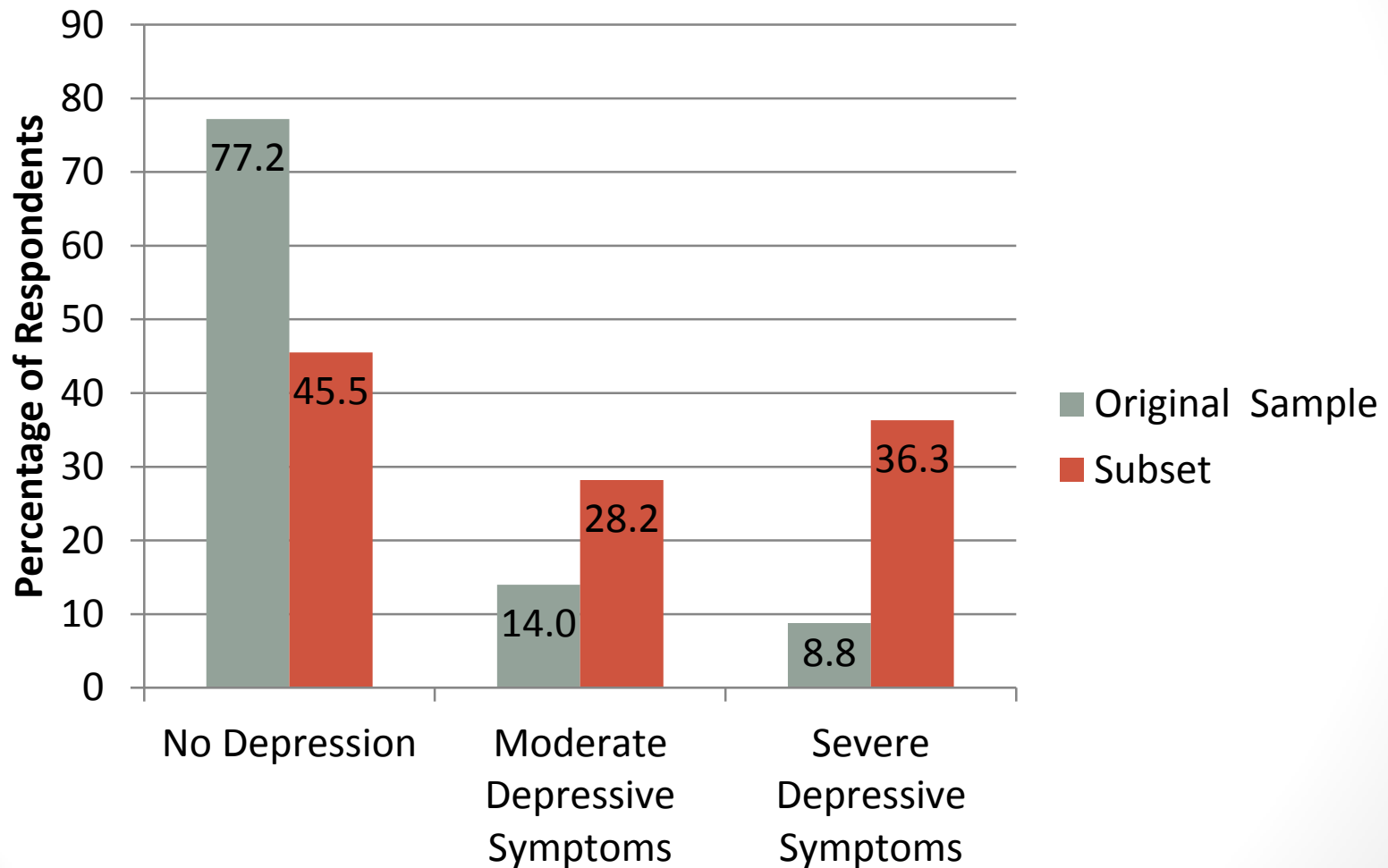


Table 3. Descriptive statistics for respondents who have applied for disability benefits (cont.)

Childhood Socioeconomic Status:	
Family Financial Hardship	28.6%
Late Midlife Socioeconomic Status:	
Education (num. of yrs.)	11.7 (3.1)
Below Poverty Threshold	30.9%
Late Midlife Social Support:	
Married/Partnered	77.9%
Friends Living Nearby	53.2%
Late Midlife Physical Health:	
Functional Health:	
ADL Index	0.9 (1.3)
IADL Index	0.7 (1.0)
Number of Chronic Cond.	3.0 (1.6)

Source: *The Health and Retirement Study* (HRS), 2008

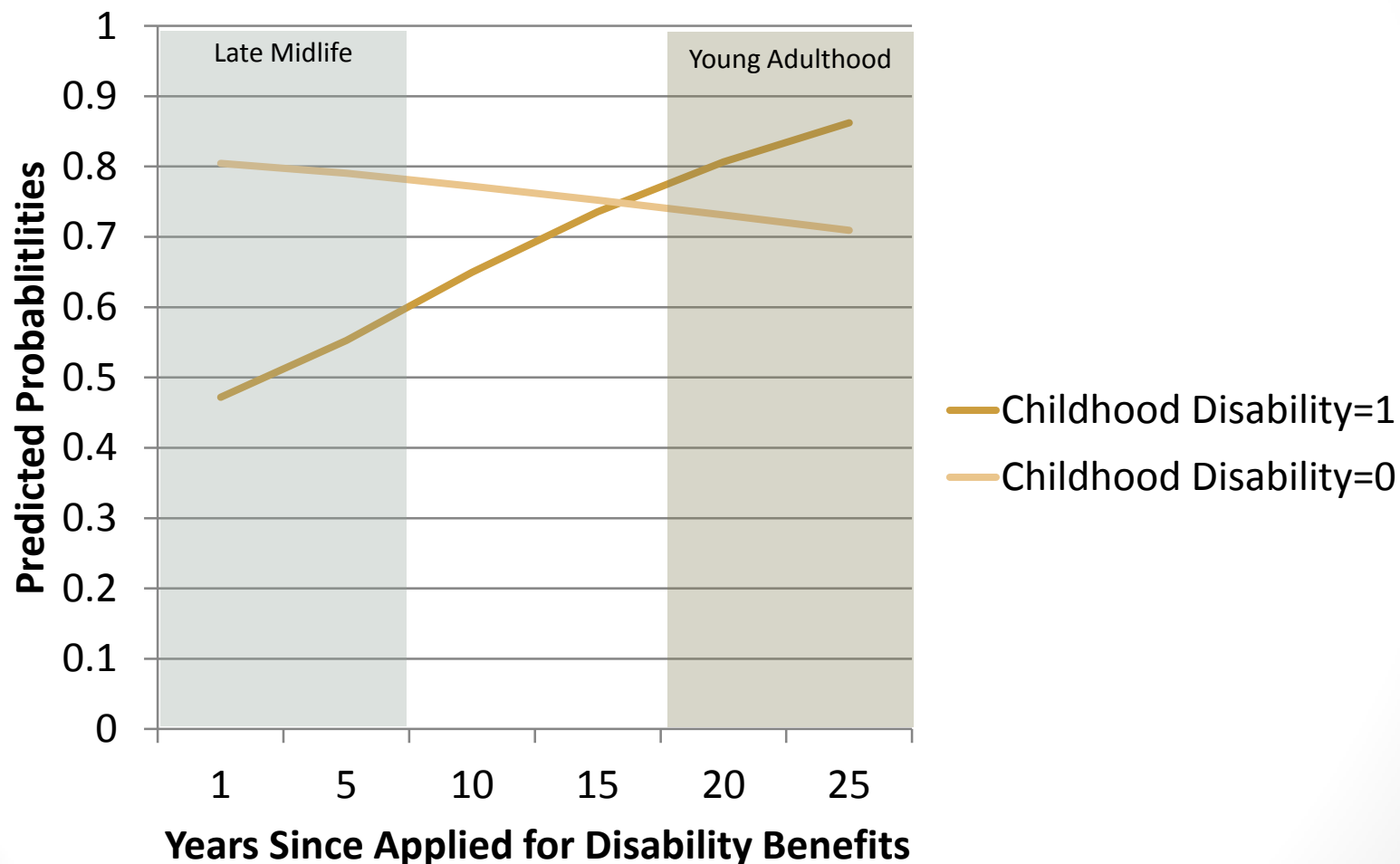
Notes: ^aPercentage distributions are shown for categorical variables; means and (standard deviations) are shown for continuous variables

Table 4. (Abridged) Odds ratio estimates of moderate and severe depressive symptoms versus no depression among respondents who have applied for disability benefits, (N=556)

	Moderate Depressive Symptoms		Severe Depressive Symptoms	
	Model 1	Model 2	Model 1	Model 2
Childhood Disability	0.64	0.20*	0.83	0.53
Years Since Applied for Disb. Benefits	0.99	0.98	0.99	0.99
Interaction Term:				
Childhood Dis.*Years Since Applied		1.11*		1.04

Notes: *0.05 ≤ p < 0.01; ** 0.01 ≤ p < 0.001; *** p ≤ 0.001

Figure 1. Predicted probabilities of moderate depressive symptoms for a respondent who has applied for disability benefits



Discussion

- This research suggests that more recent onset of disability and current physical impairment are associated with greater risk of depression compared to nondisabled individuals.
 - Among those who had applied for disability benefits, the prevalence of depression was higher with 54.5% reporting 3 or more depressive symptoms versus 22.8% of the full sample.

Discussion

- After adjusting for demographic characteristics, childhood disability was significantly associated with moderate and severe depressive symptoms versus no depression; however, childhood health and SES mediated the relationship between childhood disability and moderate depressive symptoms and partially mediated the relationship between childhood disability and severe depressive symptoms.
- Furthermore, it appeared that the association between childhood disability and severe depressive symptoms was mediated by late midlife physical health.

Discussion

- Disability benefits application status was also associated with moderate and severe depressive symptoms.
 - Compared to respondents who had never applied for disability benefits, respondents who had applied 0-3 years ago had approximately 80% greater odds of moderate or severe depressive symptoms, while respondents applying 4-8 years ago were over two times as likely to report moderate or depressive symptoms.

Discussion

- Using predicted probabilities, a cross-over was documented for childhood disability and years since applied for disability benefits.
 - Respondents who had applied later in the life course (i.e., late midlife) and reported having childhood disability had lower probabilities of reporting moderate depressive symptoms compared to those without childhood disability.

Policy Implications

- Individuals who had childhood disability and applied for disability benefits in early adulthood or midlife may be at an increased risk of depression or depressive symptoms.
 - Torres-Gil (2007) observes that individuals aging with disability may be more dependent on disability benefit programs such as Social Security than those experiencing disability with aging; therefore, changes to disability beneficiaries would impact aging with disability people disproportionately.

Policy Implications

- Because of the association between disability and depression and the potential for both conditions to reinforce each other, interventions designed to improve mental health for individuals aging with disability could prevent or slow functional impairment over the life course.
- Prior research has suggested that social support and social participation are more strongly related to mental health outcomes among individuals aging with disability than severity of impairment (Kemp, 2004); therefore, policies aimed at encouraging greater social participation for people aging with disability within their communities may provide a unique opportunity for better mental health and functioning.

Future Research and Directions

- Future research should endeavor to more fully uncover the intricate relationship between disability and depression over the life course for individuals aging with disability.
- Research exploring successful coping mechanisms and environmental facilitators (both physical and social) for maintaining high levels of social support and social participation among those aging with disability may reveal important information for clinicians interested in mental health interventions.

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